CLAIMS

What is claimed is:

1.   A method of forwarding network traffic comprising:

        storing a link to an alternate neighbor node at a network node, and

5   upon detecting network traffic coming from a primary neighbor node at the network node, the primary neighbor node being primary for the network node with respect to the network traffic, forwarding the network traffic to the alternate neighbor node.

2.   The method of Claim 1 wherein the alternate neighbor node is loop-free for the

10   network traffic with respect to the primary neighbor node.

3.   The method of Claim 2 wherein the alternate neighbor node is loop-free for the network traffic with respect to a primary neighbor of the primary neighbor node with respect to the network traffic.

4.   The method of Claim 3 wherein the alternate neighbor node is loop-free for the

15   network traffic with respect to all primary neighbors of the primary neighbor node with respect to the network traffic.

5.   The method of Claim 3 wherein the alternate neighbor node is loop-free for the network traffic with respect to all nodes failing together with primary neighbors of the primary neighbor node with respect to the network traffic.

20 6.   The method of Claim 2 wherein the alternate neighbor node is the first node on a path to the traffic destination and that path does not utilize any links or nodes that

are known to potentially fail simultaneously with any of the primary neighbor's primary next hops.

7.   The method of Claim 2 wherein the alternate neighbor node is the first node on a path to the traffic destination and that path does not utilize any links or nodes that are known to potentially fail simultaneously with any of the primary neighbor's primary neighbors.

8.   The method of Claim 2 wherein the alternate neighbor node is loop-free for the network traffic with respect to a primary remote node, the primary remote node being a node in a sequence of nodes starting at the network node, each node in the sequence being a primary neighbor of the prior node in the sequence with respect to the network traffic and each node in the sequence being an alternate neighbor node of the latter node in the sequence.

9.   The method of Claim 2 wherein the alternate neighbor node is loop-free for the network traffic with respect to a primary remote node, the primary remote node being a node in a sequence of nodes starting at the network node, each node in the sequence being a primary neighbor of the prior node in the sequence with respect to the network traffic.

10.   The method of Claim 9 wherein the alternate neighbor node is loop-free for the network traffic with respect to a primary neighbor of the remote primary node with respect to the network traffic.

11.   The method of Claim 9 wherein the alternate neighbor node is loop-free for the network traffic with respect to all primary neighbors of the remote primary node with respect to the network traffic.

12.   The method of Claim 9 wherein the alternate neighbor node is loop-free for the network traffic with respect to all nodes failing together with primary neighbors of the remote primary node with respect to the network traffic.

13.   The method of Claim 1 wherein the network node is primary for the alternate
5   neighbor node with respect to the network traffic.

14.   The method of Claim 1 wherein the alternate neighbor node depends on the network traffic's destination.

15.   The method of Claim 1 wherein the alternate neighbor node is determined using a modified Dijkstra algorithm.

10 16.   The method of Claim 1 wherein the network packet comprises data packets.

17.   A method of forwarding network traffic to a globally defined destination comprising:
        at a network node, for the destination, storing a function mapping inputs of the network node to outputs of the network node; and
15   forwarding the network traffic arriving to the network node from the inputs to the outputs according to the mapping function.

18.   A method of forwarding network traffic to a globally defined destination without multicasting the network traffic comprising:
        at a network node, for the destination, storing a function mapping inputs
20   of the network node to outputs of the network node; and
        forwarding the network traffic arriving to the network node from the inputs to the outputs according to the mapping function.